

**ABSTRACT**

A thread breakage detection apparatus comprises a light source operable to generate a light beam, an emitter in communication with the light source, the emitter operable to emit the light beam, and a receiver in communication with and disposed in facing opposition to the emitter, the receiver operable to receive the light beam emitted from the emitter and to communicate the light beam to a sensor. The emitter comprises an emitter lens and a first fiber optic cable comprising proximate and distal ends. The proximate end of the first cable in communication with the light source and the distal end of the first cable in communication with the emitter lens. The receiver comprises a receiving lens and a second fiber optic cable comprising proximate and distal ends, the proximate end of the second cable in communication with the receiving lens and the distal end of the second cable in communication with the sensor.